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LANDAU
ASSOCIATES,
INC.
Geoenvironmental Engineering and Technologies

January 7, 1991

Mr. Mike Kuntz
Washington State Department of Ecology
M/S PV-11
Olympia, WA 98504-8711

RE: DECEMBER 1990 PROGRESS REPORT
COLBERT LANDFILL RD/RA

Dear Mr. Kuntz:

Presented herein is the December 1990 Progress Report for the Colbert Landfill RD/RA Superfund Project (Project), which was prepared by Landau Associates, Inc., Spokane County's engineering consultant. It addresses the reporting requirements specified in Section XI of the Project Consent Decree, including:

- A description of remedial action activities commenced or completed during the reporting period
- Remedial action activities projected for the next reporting period (through January 1991)
- Any problems that have been encountered or are anticipated.

1.0 ACTIVITIES COMMENCED/COMPLETED DURING REPORTING PERIOD

Several activities were commenced and/or completed during the reporting period. Most of these activities are related to continuation of the Phase I pilot studies and operation of the onsite meteorological station.

- The East System/North Well pilot study was initiated. However, operational difficulties resulted in repeated system shutdown, and the pilot study was not completed. These operational difficulties are described in Section 3.0.
- The onsite meteorological station was calibrated December 18, except for the temperature sensor. The temperature sensor was not calibrated because of inclement weather, and will be calibrated during the external audit described in Section 2.0.
- The Meteorological measurements Quality Assurance Plan (QA Plan) was submitted to EPA and Ecology for review December 28.

2.0 ACTIVITIES PROJECTED TO BE COMMENCED/COMPLETED DURING NEXT REPORTING PERIOD

As specified in the Schedule for Submittal of Deliverables, the next reporting period extends through January 1991. Anticipated activities for January include rehabilitation of Extraction Well CP-E1, continuation of pilot study activities, and audit of the onsite meteorological station. Specific activities anticipated for the next reporting period include:

- Evaluate and rehabilitate Extraction Well CP-E1 (see Section 3.0 for description of well performance problems). Evaluation will include:
  - Removal and inspection of the submersible pump and discharge pipe
  - Sounding the well (for the presence of sediment)
  - Inspection of the well casing and screen via downhole camera.

  The method of well rehabilitation is dependent on the cause of the well performance problem. Potential well rehabilitation methods include:
  - Treatment and cleaning of the well screen
  - Removal and replacement of the existing well screen; a longer well screen will be installed if the performance problem is the result of chemical incrustation
  - Replacement of the galvanized steel discharge pipe with a discharge pipe fabricated from materials more compatible with stainless steel, if the performance problem is the result of galvanic reaction.

  EPA and Ecology will be kept appraised of well evaluation and rehabilitation activities, and how these activities impact the pilot study schedule (by mid-January).
- Resume Phase I pilot studies. The East System/North Well pilot study will be reinitiated contingent upon rehabilitation of Extraction Well CP-E1 (by late January).
- Accomplish an external audit of the onsite meteorological station. The audit is contingent upon EPA and Ecology approval of the QA Plan, and moderate site weather conditions (by late January).

3.0 ENCOUNTERED/ANTICIPATED PROBLEMS

Treatment system and pilot extraction well operational difficulties resulted in shutdown of the East System/North Well pilot study (Test). Also, stripping tower effluent concentrations are higher than anticipated for methylene chloride. The following subsections address these encountered problems.

3.1 Operational Difficulties

Attempts were made to conduct the Test on December 5, 10, and 18. The December 5 Test attempt automatically shut down after about 36 hours because scaling caused the effluent pump impeller to bind and trip an electrical circuit breaker. The pump was serviced and the Test restarted December 10. However, the system shut down again after about 36 hours due to scaling in the effluent pump. The effluent line was converted to gravity flow on December 13, which eliminated the problem.

Increased well loss was observed during these repeated Test startups. Drawdown in Extraction Well CP-E1 after 10 minutes of pumping increased from about 15.7 feet on December 5 to about 23.1 feet on December 13 (the system was started on December 13 to test the gravity flow effluent line).

The pumping rate was decreased by about 10 percent (from 220 to 200 gpm) for the December 18 Test attempt. However, drawdown in Extraction Well CP-E1 (after 10 minutes of pumping) increased to about 25.3 feet at the reduced discharge rate. Additionally, the long-term drawdown rate in Extraction Well CP-E1 for the December 18 Test increased from previous Test attempts, forcing termination of the Test due to lack of available drawdown after about 24 hours of operation.

The increased drawdown in Extraction Well CP-E1 was not accompanied by increased drawdown in the observation wells. Consequently, the increased drawdown is probably due to decreased well efficiency. Decreased well efficiency could be the result of:

- Sediment accumulation in the well
- Biological fouling of the well screen
- Chemical incrustation of the well screen
- Galvanic reaction between the well screen and the galvanized steel discharge pipe.

The decreased efficiency of Extraction Well CP-E1 will be evaluated and the well rehabilitated, as described in Section 2.0.

3.2 Effluent Water Quality

An effluent sample was collected December 3 and analyzed prior to the December 5 Test startup. The analyses confirmed that concentrations for the Constituents of Concern were all below the Consent Decree Table IV-1 Evaluation Criteria (Evaluation Criteria). However, the

methylene chloride concentration was 20 parts per billion (ppb), which is 5 ppb below the 25 ppb Evaluation Criteria concentration. The stripping tower air flow rate was increased to capacity to reduce the probability that the Evaluation Criteria would be exceeded, and the methylene chloride concentration decreased to 14 ppb as a result.

Although exceedance of the Evaluation Criteria during Phase I is not likely, methylene chloride effluent concentration is significantly higher than anticipated, without a corresponding increase in influent concentration. The cause of this difference (between anticipated and observed effluent concentration) will be evaluated and discussed in the Phase I Engineering Report.

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This progress report describes the primary remedial action activities commenced or completed during the reporting period, and anticipated to be commenced or completed during the next reporting period. There are secondary and peripheral activities associated with the primary activities that are not described herein. If clarification is required for any of the activities presented in this progress report, or if additional information is desired for secondary or peripheral activities, please contact me or Dean Fowler (Spokane County).

Very truly yours,

LANDAU ASSOCIATES, INC.

By:

Lawrence D. Beard, P.E.
Project Manager

LDB/sg
No. 124-01.60
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cc: Neil Thompson, EPA
Dean Fowler, Spokane County
Lyle Diedieker, Ecology and Environment